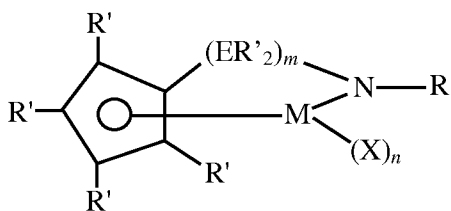


**Amendment to the Claims:**

Please amend the claims as follows:

Claim 1 (Currently Amended): A homogeneous substantially linear, liquid low molecular weight ethylene/alpha-olefin polymer having:

- a) a number average molecular weight ( $M_n$ ), as determined by gel permeation chromatography, of less than 25,000;
- b) a total crystallinity, as measured by DSC, of less than 10%;
- c) a pour point, as measured by ASTM D97, of less than 50°C, and wherein the polymer is prepared in the presence of a constrained geometry catalyst, of the Formula III:



wherein:

M is titanium, zirconium or hafnium, bound in an  $\eta^5$  bonding mode to the cyclopentadienyl group;

R' each occurrence is independently selected from the group consisting of hydrogen, silyl, alkyl, aryl, and combinations thereof, having up to 10 carbon or silicon atoms;

E is silicon or carbon;

X independently each occurrence is hydride, halo, alkyl, aryl, aryloxy or alkoxy of up to 10 carbons;

m is 1 or 2; and n is 1 or 2 depending on the valence of M.

Claim 2 (Previously Presented): The homogeneous liquid low molecular weight ethylene/alpha-olefin polymer of Claim 1, wherein said polymer is a copolymer of ethylene and at least one comonomer selected from the group

consisting of ethylenically unsaturated monomers, conjugated or nonconjugated dienes, and polyenes, and wherein the polymer has:

- a) a number average molecular weight ( $M_n$ ), as determined by gel permeation chromatography, of less than 15,000;
- b) a comonomer incorporation of greater than 15 mol percent;
- c) a total crystallinity, as measured by DSC, of less than 7%; and
- c) a pour point, as measured by ASTM D97, of less than 40°C.

Claim 3 (Previously Presented): The homogeneous liquid low molecular weight ethylene/alpha-olefin polymer of Claim 1, wherein said comonomer is an ethylenically unsaturated monomer selected from the group consisting of the  $C_3$ - $C_{20}$   $\alpha$ -olefins, styrene, alkyl-substituted styrene, vinylbenzocyclobutane, 1,4-hexadiene, and naphthenics, and wherein the polymer has:

- a) a number average molecular weight ( $M_n$ ), as determined by gel permeation chromatography, of less than 11,000;
- b) a comonomer incorporation of greater than 30 mol percent;
- c) a total crystallinity, as measured by DSC, of less than 5%; and
- d) a pour point, as measured by ASTM D97, of less than 25°C.

Claim 4 (Previously Presented): The homogeneous liquid low molecular weight ethylene/alpha-olefin polymer of Claim 1, wherein the comonomer is an ethylenically unsaturated monomer, which is a  $C_3$ - $C_{20}$   $\alpha$ -olefin, and wherein the  $\alpha$ -olefin is further selected from the group consisting of 1-propene, isobutylene, 1-butene, 1-hexene, 1-heptene, 4-methyl-1-pentene, and 1-octene; and wherein the polymer has:

- a) a number average molecular weight ( $M_n$ ), as determined by gel permeation chromatography, of less than 9,000;
- b) a comonomer incorporation of greater than 40 mol percent;
- c) a total crystallinity, as measured by DSC, of less than 2%; and

d) a pour point, as measured by ASTM D97, of less than 15°C.

Claim 5 (Previously Presented): The homogeneous liquid low molecular weight ethylene/alpha-olefin polymer of Claim 4, wherein the comonomer is an ethylenically unsaturated monomer, which is selected from the group consisting of propylene and 1-octene; and wherein the polymer has:

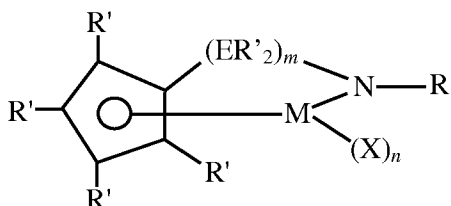
- a) a comonomer incorporation of greater than 50 mol percent; and
- b) a pour point, as measured by ASTM D97, of less than 0°C.

Claim 6 (Currently Amended): A process comprising reacting ethylene and at least one ethylenically unsaturated comonomer at a reaction temperature of at least 80°C, in the absence of hydrogen, and in the presence of a single site catalyst, to form a homogeneous substantially linear, liquid low molecular weight ethylene/alpha-olefin polymer having:

- a) a number average molecular weight ( $M_n$ ), as determined by gel permeation chromatography, of less than 25,000;
- b) a comonomer content of greater than 15 mol percent;
- c) a total crystallinity, as measured by DSC, of less than 10%;
- d) a pour point, as measured by ASTM D97, of less than 50°C,

and

wherein the polymer is prepared in the presence of a constrained geometry catalyst, of the Formula III:



Formula III,

wherein:

M is titanium, zirconium or hafnium, bound in an  $\eta^5$  bonding mode to the cyclopentadienyl group;

R' each occurrence is independently selected from the group consisting of hydrogen, silyl, alkyl, aryl, and combinations thereof, having up to 10 carbon or silicon atoms;

E is silicon or carbon;

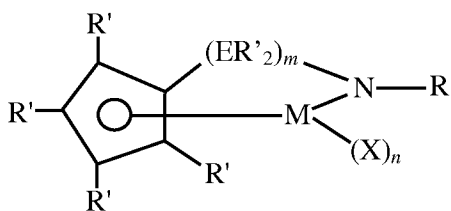
X independently each occurrence is hydride, halo, alkyl, aryl, aryloxy or alkoxy of up to 10 carbons;

m is 1 or 2; and n is 1 or 2 depending on the valence of M.

Claim 7 (Currently Amended): A pour-point reducing additive comprising a homogeneous substantially linear, liquid low molecular weight ethylene/alpha-olefin polymer having:

- a) a number average molecular weight ( $M_n$ ), as determined by gel permeation chromatography, of less than 25,000;
- b) a total crystallinity, as measured by DSC, of less than 10%;
- c) a pour point, as measured by ASTM D97, of less than 50°C, and

wherein the polymer is prepared in the presence of a constrained geometry catalyst, of the Formula III:



Formula III,

wherein:

M is titanium, zirconium or hafnium, bound in an  $\eta^5$  bonding mode to the cyclopentadienyl group;

R' each occurrence is independently selected from the group consisting of hydrogen, silyl, alkyl, aryl, and combinations thereof, having up to 10 carbon or silicon atoms;

E is silicon or carbon;

X independently each occurrence is hydride, halo, alkyl, aryl, aryloxy or alkoxy of up to 10 carbons;

m is 1 or 2; and n is 1 or 2 depending on the valence of M.

Claim 8 (Previously Presented): The pour-point reducing additive of Claim 7, wherein said homogeneous liquid low molecular weight ethylene/alpha-olefin polymer is a copolymer of ethylene and at least one comonomer, selected from the group consisting of ethylenically unsaturated monomers, conjugated or nonconjugated dienes, and polyenes, and wherein the polymer has:

- a) a number average molecular weight (Mn), as determined by gel permeation chromatography, of less than 15,000;
- b) a comonomer incorporation of greater than 15 mol percent;
- c) a total crystallinity, as measured by DSC, of less than 7%; and
- d) a pour point, as measured by ASTM D97, of less than 40°C.

Claim 9 (Previously Presented): The pour-point reducing additive of Claim 7, wherein said homogeneous liquid low molecular weight ethylene/alpha-olefin polymer is a copolymer of an ethylenically unsaturated monomer selected from the group consisting of the C<sub>3</sub>-C<sub>20</sub> α-olefins, styrene, alkyl-substituted styrene, vinylbenzocyclobutane, 1,4-hexadiene, and naphthenics, and wherein the polymer has:

- a) a number average molecular weight (Mn) as determined by gel permeation chromatography, of less than 11,000;
- b) a comonomer incorporation of greater than 30 mol percent;
- c) a total crystallinity, as measured by DSC, of less than 5%; and
- d) a pour point, as measured by ASTM D97, of less than 25°C.

Claim 10 (Previously Presented): The pour-point reducing additive of Claim 7, wherein said homogeneous liquid low molecular weight ethylene/alpha-olefin polymer is a copolymer of an ethylenically unsaturated monomer, which is a C<sub>3</sub>-C<sub>20</sub>  $\alpha$ -olefin, and wherein the  $\alpha$ -olefin is further selected from the group consisting of 1-propene, isobutylene, 1-butene, 1-hexene, 1-heptene, 4-methyl-1-pentene, and 1-octene; and wherein said polymer has:

- a) a number average molecular weight (Mn), as determined by gel permeation chromatography, of less than 9,000;
- b) a comonomer incorporation of greater than 40 mol percent;
- c) a total crystallinity, as measured by DSC, of less than 2%; and
- d) a pour point, as measured by ASTM D97, of less than 15°C.

Claim 11 (Previously Presented): The pour-point reducing additive of Claim 9, wherein said homogeneous liquid low molecular weight ethylene/alpha-olefin polymer is a copolymer of an ethylenically unsaturated monomer, which is selected from the group consisting of propylene and 1-octene; and wherein the polymer has:

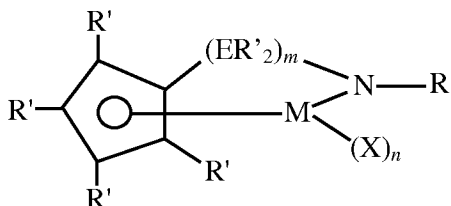
- a) a comonomer incorporation of greater than 50 mol percent; and
- b) a pour point, as measured by ASTM D971, of less than 0°C.

Claim 12 (Previously Presented): A synthetic oil for use as a lubricant oil, and comprising the liquid low molecular weight ethylene/alpha-olefin polymer of Claim 1, and wherein said oil has a kinematic viscosity at 100°C of 4 to 200 centistokes.

Claim 13 (Currently Amended): A homogeneous substantially linear, gel-like low molecular weight ethylene/alpha-olefin polymer having:

- a) a number average molecular weight (Mn), as determined by gel permeation chromatography, of less than 25,000;
- b) a total crystallinity, as measured by DSC, of less than 50%; and

c) a pour point, as measured by ASTM D97, of less than 90°C, and wherein the polymer is prepared in the presence of a constrained geometry catalyst, of the Formula III:



Formula III,

wherein:

M is titanium, zirconium or hafnium, bound in an  $\eta^5$  bonding mode to the cyclopentadienyl group;

R' each occurrence is independently selected from the group consisting of hydrogen, silyl, alkyl, aryl, and combinations thereof, having up to 10 carbon or silicon atoms;

E is silicon or carbon;

X independently each occurrence is hydride, halo, alkyl, aryl, aryloxy or alkoxy of up to 10 carbons;

m is 1 or 2; and n is 1 or 2 depending on the valence of M.

Claim 14 (Previously Presented): The homogeneous gel-like low molecular weight ethylene/alpha-olefin polymer of Claim 13, wherein said polymer is a copolymer of ethylene and at least one comonomer selected from the group consisting of ethylenically unsaturated monomers, conjugated or nonconjugated dienes, and polyenes, and wherein the polymer has:

- a) a number average molecular weight (M<sub>n</sub>), as determined by gel permeation chromatography, of less than 15,000;
- b) a comonomer incorporation of greater than 10 mol percent;
- c) a total crystallinity, as measured by DSC, of less than 40%; and
- c) a pour point, as measured by ASTM D97, of less than 80°C.

Claim 15 (Previously Presented): The homogeneous gel-like low molecular weight ethylene/alpha-olefin polymer of Claim 13, wherein said comonomer is an ethylenically unsaturated monomer selected from the group consisting of the C<sub>3</sub>-C<sub>20</sub>  $\alpha$ -olefins, styrene, alkyl-substituted styrene, vinylbenzocyclobutane, 1,4-hexadiene, and naphthenics, and wherein the polymer has:

- a) a number average molecular weight (Mn), as determined by gel permeation chromatography, of less than 11,000;
- b) a comonomer incorporation of greater than 12 mol percent;
- c) a total crystallinity, as measured by DSC, of less than 30%; and
- d) a pour point, as measured by ASTM D97, of less than 70°C.

Claim 16 (Previously Presented): The homogeneous gel-like low molecular weight ethylene/alpha-olefin polymer of Claim 13, wherein the comonomer is an ethylenically unsaturated monomer, which is a C<sub>3</sub>-C<sub>20</sub>  $\alpha$ -olefin, and wherein the  $\alpha$ -olefin is further selected from the group consisting of 1-propene, isobutylene, 1-butene, 1-hexene, 1-heptene, 4-methyl-1-pentene, and 1-octene; and wherein the polymer has:

- a) a number average molecular weight (Mn), as determined by gel permeation chromatography, of less than 9,000;
- b) a comonomer incorporation of greater than 13 mol percent;
- c) a total crystallinity, as measured by DSC, of less than 20%; and
- d) a pour point, as measured by ASTM D97, of less than 60°C.

Claim 17 (Previously Presented): The homogeneous gel-like low molecular weight ethylene/alpha-olefin polymers of Claim 16, wherein the comonomer is an ethylenically unsaturated monomer, which is selected from the group consisting of propylene and 1-octene; and wherein the polymer has:

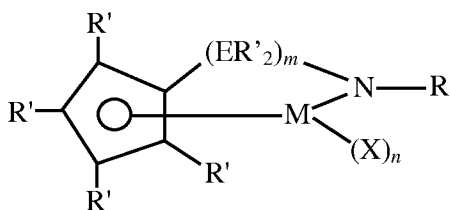
- a) a comonomer incorporation of greater than 15 mol percent; and
- b) a pour point as measured by ASTM D97 of less than 40°C.



Claim 18 (Currently Amended): A process comprising reacting ethylene and at least one ethylenically unsaturated comonomer, at a reaction temperature of at least 80°C, in the absence of hydrogen, and in the presence of a single site catalyst, to form a homogeneous substantially linear, gel-like low molecular weight ethylene/alpha-olefin polymer having:

- a) a number average molecular weight ( $M_n$ ), as determined by gel permeation chromatography, of less than 25,000;
- b) a comonomer content of greater than 10 mol percent;
- c) a total crystallinity, as measured by DSC, of less than 50%;
- d) a pour point, as measured by ASTM D97, of less than 90°C, and

wherein the polymer is prepared in the presence of a constrained geometry catalyst, of the Formula III:



Formula III,

wherein:

M is titanium, zirconium or hafnium, bound in an  $\eta^5$  bonding mode to the cyclopentadienyl group;

R' each occurrence is independently selected from the group consisting of hydrogen, silyl, alkyl, aryl, and combinations thereof, having up to 10 carbon or silicon atoms;

E is silicon or carbon;

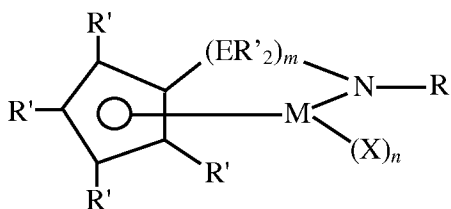
X independently each occurrence is hydride, halo, alkyl, aryl, aryloxy or alkoxy of up to 10 carbons;

m is 1 or 2; and n is 1 or 2 depending on the valence of M.

Claim 19 (Currently Amended): A pour-point reducing additive comprising a homogeneous substantially linear, gel-like low molecular weight ethylene/alpha-olefin polymer having:

- a) a number average molecular weight ( $M_n$ ), as determined by gel permeation chromatography, of less than 25,000;
- b) a total crystallinity, as measured by DSC, of less than 50%;
- c) a pour point, as measured by ASTM D97, of less than 90°C, and

wherein the polymer is prepared in the presence of a constrained geometry catalyst, of the Formula III:



Formula III,

wherein:

M is titanium, zirconium or hafnium, bound in an  $\eta^5$  bonding mode to the cyclopentadienyl group;

R' each occurrence is independently selected from the group consisting of hydrogen, silyl, alkyl, aryl, and combinations thereof, having up to 10 carbon or silicon atoms;

E is silicon or carbon;

X independently each occurrence is hydride, halo, alkyl, aryl, aryloxy or alkoxy of up to 10 carbons;

m is 1 or 2; and n is 1 or 2 depending on the valence of M.

Claim 20 (Previously Presented): The pour-point reducing additive of Claim 19, wherein said homogeneous gel-like low molecular weight ethylene/alpha-olefin polymer is a copolymer of ethylene and at least one comonomer selected from the group consisting of ethylenically unsaturated monomers, conjugated or nonconjugated dienes, and polyenes, and wherein the polymer has:

- a) a number average molecular weight (Mn), as determined by gel permeation chromatography, of less than 15,000;
- b) a comonomer incorporation of greater than 10 mol percent;
- c) a total crystallinity, as measured by DSC, of less than 40%; and
- d a pour point, as measured by ASTM D97, of less than 80°C.

Claim 21 (Previously Presented): The pour-point reducing additive of Claim 19, wherein said homogeneous gel-like low molecular weight ethylene/alpha-olefin polymer is a copolymer of ethylene and a comonomer, wherein said comonomer is an ethylenically unsaturated monomer selected from the group consisting of the C<sub>3</sub>-C<sub>20</sub>  $\alpha$ -olefins, styrene, alkyl-substituted styrene, vinylbenzocyclobutane, 1,4-hexadiene, and naphthenics, and wherein the polymer has:

- a) a number average molecular weight (Mn), as determined by gel permeation chromatography, of less than 11,000;
- b) a comonomer incorporation of greater than 12 mol percent;
- c) a total crystallinity, as measured by DSC, of less than 30%; and
- d) a pour point, as measured by ASTM D97, of less than 70°C.

Claim 22 (Previously Presented): The pour-point reducing additive of Claim 19, wherein said homogeneous gel-like low molecular weight ethylene/alpha-olefin polymer is a copolymer of an ethylenically unsaturated monomer, which is a C<sub>3</sub>-C<sub>20</sub>  $\alpha$ -olefin, and wherein the  $\alpha$ -olefin is further selected from the group consisting of 1-propene, isobutylene, 1-butene, 1-hexene, 1-heptene, 4-methyl-1-pentene, and 1-octene; and wherein said polymer has:

- a) a number average molecular weight (Mn), as determined by gel permeation chromatography, of less than 9,000;
- b) a comonomer incorporation of greater than 13 mol percent;
- c) a total crystallinity, as measured by DSC, of less than 20%; and

d) a pour point, as measured by ASTM D97, of less than 60°C.

Claim 23 (Previously Presented): The pour-point reducing additive of Claim 22, wherein said homogeneous gel-like low molecular weight ethylene/alpha-olefin polymer is a copolymer of an ethylenically unsaturated monomer, which is selected from the group consisting of propylene and 1-octene; and wherein the polymer has:

- a) a comonomer incorporation of greater than 15 mol percent; and
- b) a pour point, as measured by ASTM D97, of less than 40°C.

Claim 24 (Previously Presented): A synthetic oil for use as a lubricant oil, and comprising the gel-like low molecular weight ethylene/alpha-olefin polymer of Claim 13, and wherein said oil has a kinematic viscosity at 100°C of 4 to 200 centistokes.